

**IN THE UNITED STATES DISTRICT
COURT FOR THE EASTERN DISTRICT
OF VIRGINIA NORFOLK DIVISION**

Latasha Holloway, *et al.*,

Plaintiffs,

v.

City of Virginia Beach, *et al.*,

Defendants

Civil Action No. 2:18-cv-0069

**DEFENDANTS' MOTION TO EXCLUDE PLAINTIFFS' SUPPLEMENTAL
EXPER REPORTS AND OPINIONS**

PLAINTIFFS' EXHIBIT 8

Expert Report of
Peter A. Morrison, PH.D

REPORT OF PETER A. MORRISON, PH.D.

In *Holloway, et al. v. City of Virginia Beach, et al.*

August 12, 2019

1. I have been retained as an expert in the case of *Holloway, et al. v. City of Virginia Beach, et al.* by the City of Virginia Beach. I have been asked to evaluate Plaintiffs' November 13, 2018 *Amended Complaint* and the July 15, 2019 *Expert Report of Anthony E. Fairfax* (Plaintiffs' expert). The specific focus of my evaluation is Plaintiffs' claim that "The minority citizen voting age population is sufficiently large and geographically compact to constitute a majority in at least two single-member districts that would be likely able to elect their candidates of choice to the City Council" [Amended Complaint at paragraph 8]. That claim is based upon Mr. Fairfax's findings and his definition of the *minority citizen voting age population* as the combined Hispanic, Black, and Asian citizen voting age citizen population ("the HBA citizen voting age population") of the City of Virginia Beach.
2. My evaluation relies on the following sources: (1) official demographic data from the US Census Bureau; (2) data provided to me at my request by Mr. Kimball Brace; (3) Plaintiffs' *Complaint* and Mr. Fairfax's *Expert Report*; (4) GIS shape files and demographic data that Plaintiffs have provided, which Mr. Fairfax purportedly has used and/or relied upon; (5) US Census Bureau technical documentation pertaining to the American Community Survey.
3. I am an applied demographer and am retired from The RAND Corporation, where I was Senior Demographer and the founding director of RAND's Population Research Center. I have served on the U.S. Census Bureau Advisory Committee on Population Statistics, 1989-1995, and as an invited participant on the Bureau's Working Group on 2010 Race and Ethnicity. I have been elected as President of the Southern Demographic Association and to the Board of Directors of the Population Association of America, which are the two leading associations of professional demographers. I have taught students at the University of Pennsylvania, the RAND Graduate School, and the University of Helsinki. I am being compensated at a rate of \$250/hour for my work in reviewing materials and preparing this report. I will be compensated at a rate of \$400/hour for any testimony I give in court or by deposition.
4. Attached Appendix A lists all cases in which I have testified by declaration, deposition, or at trial since August 2012. Attached Appendix B summarizes my academic background, including all publications in the last ten years.
5. All conclusions contained within my following Report are to the reasonable degree of scientific certainty (at least 90% certain) that scholars and experts in my field use.

I. FINDINGS AND CONCLUSIONS

SUMMARY OF FINDINGS AND CONCLUSIONS

6. *Plaintiffs base their claim to have satisfied the first of the three necessary "Gingles preconditions" upon Mr. Fairfax's flawed findings.* This first Gingles prong requires a plaintiff to show that the minority group is "sufficiently large and geographically compact to constitute a majority in a single-member district." Mr. Fairfax's findings themselves are hopelessly flawed by obvious inconsistencies in the data he used, which include numbers that do not add up as they should. He cannot draw conclusions or make estimates with any reasonable degree of scientific certainty.

7. ***Plaintiffs purport to satisfy first Gingles prong by defining a concocted aggregate of three distinct protected minorities (Hispanics, Blacks, and Asians).*** Here, Plaintiffs rely upon Mr. Fairfax's definition of the *minority citizen voting age population* as the combined Hispanic, Black, and Asian citizen voting age citizen population ("the HBA citizen voting age population") of the City of Virginia Beach. I replicated Mr. Fairfax's aggregation of his own block-level data to form his two proposed districts (using his GIS shape files to allocate his own defective data). By my calculations, Mr. Fairfax should have obtained "HBA citizen voting age population" shares of CVAP fractionally below those he reports in Table 7 in his *Expert Report* (at page 20). Specifically, I obtain 49.99% for his District 1 (vs. his 50.03%) and 49.96% for his District 2 (vs. his 50.04%). Even were his estimates accepted as accurate, he cannot draw conclusions about the minority CVAP with any reasonable degree of scientific certainty.

8. ***Based upon the above findings, I conclude that Plaintiffs have not satisfied the first of the three necessary "Gingles preconditions" for a claim of vote dilution under Section 2, nor could they do so.*** Plaintiffs' claim depends upon the opinion that Mr. Fairfax has rendered. I regard his opinion as inherently unreliable. It is based upon his faulty interpretation of a measure that he derived from a defective dataset.

RESPONSE TO FAIRFAX REPORT: DETAILED FINDINGS

9. Mr. Fairfax was retained by counsel representing the Plaintiffs in this lawsuit to determine whether it is possible to draw an Illustrative Plan with two majority Latino (Hispanic), Black, and Asian ("HBA") combined districts in the City of Virginia Beach, using ten single-member voting districts and one at-large mayoral race.

10. Mr. Fairfax's definition of a majority "HBA" district is one in which the *minority citizen voting age population* is the combined Hispanic, Black, and Asian citizen voting age citizen population ("the HBA citizen voting age population") of the City of Virginia Beach. This "tripart minority coalition" district presumes political cohesion among Hispanics, Blacks, and Asians (an embedded assumption without support).

11. Using that definition, Mr. Fairfax (and Plaintiffs, in turn) claim to have satisfied the first of the three necessary "Gingles preconditions". This first Gingles prong requires a plaintiff to show that the minority group is "sufficiently large and geographically compact to constitute a majority in a single-member district."

Mr. Fairfax's Demonstrative Districts

12. Plaintiffs claim specifically that "The minority [i.e., "HBA"] citizen voting age population is sufficiently large and geographically compact to constitute a majority in at least two single-member districts that would be likely able to elect their candidates of choice to the City Council" [*Amended Complaint* at paragraph 8]. That claim is based upon Mr. Fairfax's findings (at paragraphs (e) and (h) on pp. 4-5 of his *Expert Report*). There, Mr. Fairfax defines the *minority citizen voting age population* as the combined Hispanic, Black, and Asian citizen voting age population ("the HBA citizen voting age population") of the City of Virginia Beach. Further on (at page 20 of his Report), Mr. Fairfax presents details in his Table 7 (shown below):

Table 7 – Illustrative Plan - Major Race/Ethnicity using CVAP (2013-17 ACS)							
District	CVAP 13-17ACS	Dev	HCVAP 13-17ACS	WCVAP 13-17ACS	BCVAP 13-17ACS	ACVAP 13-17ACS	HBACVAP 13-17ACS
1	29761	157	2176	13730	9135	3566	14888
2	32804	-2090	2235	15543	12810	1367	16415
District	% CVAP 13-17ACS	% Dev	% HCVAP 13-17ACS	% WCVAP 13-17ACS	% BCVAP 13-17ACS	% ACVAP 13-17ACS	% HBACVAP 13-17ACS
1	29761	0.36%	7.31%	46.13%	30.69%	11.98%	50.03%
2	32804	-4.77%	6.81%	47.38%	39.05%	4.17%	50.04%

Note: 13-17ACS - 2013-2017 5-Year ACS

Source: U.S. Census Bureau 2013-2017 5 Year ACS Block Group data, Maptitude for Redistricting Illustrative Plan

13. The above “Table 7” (from his report) derives his working results, which I show below in Table 1. My source of his working results is page 68 in “Fairfax Virginia Beach City Council Illustrative Plan Appendices 7.5.19”. Mr. Fairfax’s two demonstrative districts are identified in Table 1 as “01” and “02”.

Table 1. Fairfax’s Demonstrative Districts

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
District	CVAP17	Deviation	% Deviation	HCVAP17	% HCVAP17	WCVAP17	% WCVAP17	BCVAP17	% BCVAP17	ACVAP17	% ACVAP17	HBACVAP17	% HBACVAP17
01	29761	157	0.36%	2176	7.31%	13730	46.13%	9135	30.69%	3566	11.98%	14888	50.03%
02	32804	-2090	-4.77%	2235	6.81%	15543	47.38%	12810	39.05%	1367	4.17%	16415	50.04%
03	31960	-156	-0.36%	2542	7.95%	17346	54.27%	7413	23.19%	3403	10.65%	13365	41.82%
04	33802	830	1.90%	1839	5.44%	22251	65.83%	6098	18.04%	2684	7.94%	10612	31.39%
05	34689	-521	-1.19%	1911	5.51%	26622	76.74%	4042	11.65%	1182	3.41%	7133	20.56%
06	34447	474	1.08%	1899	5.51%	25733	74.70%	4107	11.92%	1431	4.15%	7430	21.57%
07	35686	1073	2.45%	1150	3.22%	29635	83.04%	3279	9.19%	799	2.24%	5228	14.65%
08	33660	-504	-1.15%	2522	7.49%	22645	67.28%	5319	15.80%	1815	5.39%	9658	28.69%
09	32843	-433	-0.99%	2417	7.36%	22753	69.28%	5572	16.97%	878	2.67%	8863	26.99%
10	34848	1174	2.68%	1532	4.40%	26347	75.61%	4353	12.49%	1675	4.81%	7559	21.69%

Note: Variables with 17 suffix denote 2013-2017 5-Year ACS; HBACVAP17 includes Hispanic, Black, and Asian CVAP plus Black and White CVAP mixed persons

Source: Maptitude for Redistricting District Statistics window using U.S. Census Bureau 2010 Census Data and 2013-2017 5-Year ACS Data

14. Each of the districts featured in Table 1 is composed of individual census *blocks*. The numerical values for each block are not published by the Census Bureau; those values must be derived from the Bureau’s published *block group* data (from a special tabulation provided at the request of the US Department of Justice). A census *block* typically includes from zero to several hundred persons; a census *block group* typically encompasses 1,100 persons in two or more census blocks. While there is no one “right” way of deriving these estimates, there are several wrong ways of doing so. A common hallmark of the latter is the appearance of alarming logical inconsistencies among the values for individual census blocks.

15. Demographers favor a methodology that the US Census Bureau itself uses (referred to simply as “raking”) for preparing subnational population estimates by demographic characteristic. “Raking” is a particular application of Iterative Proportional Fitting (IPF).¹

16. I undertook an evaluation of the quality of the block-level estimates which Mr. Fairfax used to construct his two demonstrative districts. I discovered numerous inconsistencies in his census block-level data. Those inconsistencies lead me to conclude that his derivation method has produced flawed census block data. His flawed data overstate the actual minority share of CVAP in each of his two demonstrative districts shown in col. 14 of Table 1 (D-01: 50.03% and D-02: 50.04%). Although the distortions themselves are quite small, they are alarming in that they show fundamental logical inconsistencies, which signify a defective and unreliable dataset. These defects (shown below in Table 2) are irrefutable. In my opinion, these defects render the dataset untrustworthy for drawing any scientifically reliable conclusions.

Inconsistencies in Census Block Data Mr. Fairfax Used to Form His Two Demonstrative Districts

17. The data in Table 2 below illustrate the basis for my concerns. There I show the actual census block-level data that Mr. Fairfax reports having used to form his two proposed demonstrative districts (“01” and “02” shown in Table 1 above). It is these block-level data that Mr. Fairfax used to calculate the district-level percentages he shows in col. 14 of Table 1 (“%HBACVAP17”).

18. For the individual census blocks shown in Table 2, his own data enable me to compare the total citizen voting age population (corresponding to totals shown Table 1, col. 2: “CVAP17”) with the sum of its separate parts. For each row of data in Table 2, I compared the value shown in col. 2 for “CVAP17” (“Citizen Voting Age Population”) with the value that results from summing the corresponding values shown for:

- col. (5): “HCVAP17” (“Hispanic CVAP”)
 - plus col. (7): “WCVAP17” (“nonHispanic White Alone CVAP”)
 - plus col. (9): “BCVAP17” (“nonHispanic Black Alone CVAP”)
 - plus col. (11): “ACVAP17” (“nonHispanic Asian Alone CVAP”),

which I show in col. (c) of Table 2.

19. Simple logic dictates that the number in col. (c) of Table 2 cannot exceed the number in col. (b). Yet it does, according to Mr. Fairfax’s own data, in at least 27 instances which I have highlighted in yellow.

¹ See: <https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2010-2018/2018-natstcopr-meth.pdf>. For IPF, see Nik Lomax & Paul Norman (2016) Estimating Population Attribute Values in a Table: “Get Me Started in” Iterative Proportional Fitting, *The Professional Geographer*, 68:3,451-461, DOI: 10.1080/00330124.2015.1099449.

Table 2. Logical Impossibilities Detected in Fairfax's Census Block Data

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Census Block	CVAP17	HCVAP17+ WCVAP17+ BCVAP17+ ACVAP17	HCVAP17 (Hispanic)	WCVAP17 (White alone NonH)	BCVAP17 (Black alone NonH)	ACVAP17 Asian alone NonH)	TOTAL17 (Total Population)
518100402002004	1143	1146	174	433	499	40	1278
518100454065002	1085	1092	106	446	437	103	2035
518100404023008	656	663	66	218	324	55	942
518100460102005	634	654	48	394	197	15	1001
518100462201020	579	583	35	257	268	23	738
518100454052003	555	560	78	286	186	10	825
518100460153005	551	556	45	306	160	45	779
518100462041017	502	516	17	427	46	26	659
518100462042030	480	537	29	395	76	37	586
518100462201027	446		21	195	204	11	444
518100458063000	411	414	15	153	227	19	529
518100454063004	388	398	22	185	144	47	561
518100462161003	355	367	21	236	67	43	498
518100460143007	351	367	20	191	114	42	516
518100460123002	326	338	15	168	64	91	419
518100454063002	323	324	15	153	119	37	510
518100460131023	295	306	43	154	81	28	310
518100404042050	270	300	32	185	40	43	263
518100462212003	268	276	22	103	144	7	390
518100462203001	241	247	21	61	153	12	289
518100460132003	234	239	20	88	105	26	368
518100404044003	182	188	0	58	96	34	247
518100402001031	176	193	17	103	73	0	329
518100404043004	174	188	13	88	65	22	247
518100458094005	152	155	0	108	31	16	264
518100460093003	126	139	6	97	28	8	141
518100460101010	119	124	9	107	8	0	155
518100460142005	117	122	20	60	20	22	168
518100404022009	17		1	2	12	0	16
518100402003006	14		0	2	10	0	12
518100454053004	4		0	3	0	0	3

(These 27 instances of an obvious logical impossibility are merely ones I spotted through a cursory inspection of his data.)

20. Furthermore, simple logic dictates that the Citizen Voting-Age Population of a census block appearing in col. (b) cannot exceed the Total Population appearing in col. (h). Yet it does, according to Mr. Fairfax's own data, in at least 5 instances which I have highlighted in red.

21. Clearly, these logical impossibilities cast doubt on the very method Mr. Fairfax used to allocate published block group data to individual census blocks.² In my opinion, these defects render the entire dataset untrustworthy for drawing any scientifically reliable conclusions.

Mr. Fairfax's Faulty Interpretation of the Measure Derived from His Defective Dataset

22. The razor-thin purported majorities highlighted in col. 14 ("HBACVAP17") of Table 1 are *point estimates*: 50.03% and 50.04%. In statistical terms, a "point estimate" is the best estimate of an actual underlying value (assuming the dataset itself is free of defects). To illustrate: A digital thermometer that registers the outdoor temperature in whole-number degrees ("49", "50", "51", ...) is reporting a point estimate. Strictly speaking, the point estimate of "50" means "between 49.51 and 50.49".

23. Likewise, statistical reasoning dictates that the point estimates shown in Table 1 ("50.03%" and "50.04%") connote the *range* that surrounds each point estimate itself. One calculates that corresponding range from the associated margin of error (MOE), which accompanies each point estimate. This MOE governs the scientific interpretation of the point estimate.³ Point estimates and MOEs derive from the American Community Survey.

24. Mr. Fairfax has disregarded the insurmountable barrier presented by his razor-thin majority point estimates (50.03% and 50.04%). The MOEs here undermine his ability to make a claim about the minority population with any reasonable scientific certainty.

25. Even assuming that Mr. Fairfax's flawed data allowed him to estimate the minority population accurately, neither he nor any other expert can estimate with any reasonable scientific certainty whether or not Hispanics plus Blacks plus Asians are a majority of the CVAP in either district."

My Independent Replication of Mr. Fairfax's Calculations

26. As a final check, I replicated Mr. Fairfax's aggregation of block-level data in forming his two proposed districts. I used his own GIS shape files to allocate his own defective block-level data among districts. The results I obtained are shown in Table 3 below. By my calculations, Mr. Fairfax should have obtained combined three-group minority shares of CVAP that are fractionally lower than those he has reported. Specifically, I obtain 49.99% for his District 1 (vs. his 50.03%) and 49.96% for his District 2 (vs. his 50.04%). Assuming my calculations to be correct, the point estimates themselves merely round *up* fractionally to 50.0% (rather than *down* to 50.0%).

² This is not the first instance in which I have chanced upon a testifying expert whose faulty methodology has rendered an unsound opinion based upon a defective dataset. See SUPPLEMENTAL EXPERT REPORT OF PETER MORRISON, Ph.D. in *Montes v. City of Yakima*, April 8, 2013, paragraphs 4-14.

³ As a commonplace example, suppose a survey of 500 adult city residents asks them: "Are you a registered voter?" The result (51% "yes"; 49% "no") is accompanied by "+/- 3%". The analyst uses this latter statistic to gauge the level of confidence in concluding that (for example) "yes's" comprise "50% or more" of all adults citywide. Specifically, "51% (+/- 3%)" dictates the following interpretation: "One can conclude that the true percentage lies somewhere between 48% and 54%, with reasonable scientific certainty. "Reasonable" here would imply a recognized scientific standard (e.g., "with 90% confidence"). Correctly stated, my conclusion here would be: "We know with reasonable scientific certainty that the 51% point estimate means that the true percentage of all adults citywide who are registered to vote could be as low as 48%."

Table 3. Minority Shares of CVAP Using Correct CVAP Data

Minority Share of CVAP in Fairfax's Proposed Districts 1 and 2 (based upon corrected 2013-17 CVAP data)							
Fairfax's Proposed District	TOTAL CVAP	White NonHisp	Black NH	Asian NH	Hispanic	Blk+Asn+ Hispanic	B+A+H Share
1	29,766	13,723	9,136	3,598	2,145	14,879	49.99%
2	32,804	15,564	12,794	1,361	2,234	16,389	49.96%
Rest of V.B. City	271,930	193,391	40,195	13,845	15,848	69,888	25.70%
Source: Morrison's ACS block data derived through iterative porportional fitting (IPF).							

27. By both of our calculation, then, his defective dataset yields virtually identical B+A+H shares--essentially "50.0%". Based upon my data or his, the likelihood of a majority is about 50-50, comparable to the flip of a coin.

28. All conclusions contained above in my Report are to the reasonable degree of scientific certainty (at least 90% certain) that scholars and experts in my field use.

STATEMENT OF COMPENSATION:

I am being compensated at a rate of \$250 per hour for time spent assembling and analyzing data, drafting memos/reports/declarations, conferring with the attorney or client, and related work. I will be compensated at a rate of \$400 per hour for all time spent testifying by deposition or at trial.

Signed:

A handwritten signature in black ink, appearing to read "Peter A. Morrison". The signature is fluid and cursive, with a large initial "P" and "M".

Peter A. Morrison
August 12, 2019

Appendix A

Peter A. Morrison, Ph. D.

**CASES IN WHICH I HAVE TESTIFIED AT TRIAL OR BY DEPOSITION SINCE
AUGUST 2012**

1. ZORAIDA RIOS-ANDINO et al. v. ORANGE COUNTY. UNITED STATES DISTRICT COURT, MIDDLE DISTRICT OF FLORIDA, ORLANDO DIVISION. Expert Report on behalf of Defendant.
2. JAMES FIGGS AND ROBERT JACKSON v. QUITMAN COUNTY, MS. UNITED STATES DISTRICT COURT, NORTHERN DISTRICT OF MISSISSIPPI, GREENVILLE DIVISION. Affidavit in Support of Defendants' Motion for Summary Judgment.
3. Montes and Arteaga v. City of Yakima, WA. U.S. District Court, Eastern District of Washington. Deposition and trial testimony on behalf of Defendant.
4. U.S. v. TOWNHOMES OF KINGS LAKE, HOA, INC. et al. MIDDLE DISTRICT OF FLORIDA. DJ# 175-17M-499. Declaration on behalf of Plaintiff U.S. Department of Justice.
5. EVENWEL v. PERRY, U.S. DISTRICT COURT FOR THE WESTERN DISTRICT OF TEXAS. Declaration on behalf of Plaintiffs seeking to enjoin Texas from conducting further state Senate elections under Plan S172 and asking the court to require the Texas Legislature to reapportion state senatorial voting districts in conformity with the Fourteenth Amendment.
6. EVENWEL et al. v. ABBOTT et al., UNITED STATES SUPREME COURT. "Brief of Demographers Peter A. Morrison, et al. as *Amici Curiae* in Support of Appellants," in Evenwel et al. v. Abbott et al.
7. PAULETTE KREMMELE v. FAIRLIFE LLC, UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF ILLINOIS. Declaration on behalf of Defendant.
8. DR. PANKAJ JAIN, Plaintiff v. COPPELL INDEPENDENT SCHOOL DISTRICT, et al., U.S. District Court, Northern District of Texas, Dallas Division. Declaration on behalf of Defendant.
9. Glatt v. City of Pasco, et al., U.S. District Court, Eastern District of Washington. Declaration on behalf of Defendant. (Court ruled in favor of Defendant)
10. Bishop, et al. v. Shorter University, Inc., Civil Action No. 4:15-CV-0033-HLM, United States District Court for the Northern District of Georgia, Rome Division. Declaration on behalf of Defendant.
11. Feldman et al. v. Arizona Secretary of State's Office et al., United States District Court, District of Arizona. Declaration on behalf of Defendant.
12. Timothy Dadey et al. v. City of Costa Mesa, Case No. 30-2014-00757962-CU-CR-CJC and Timothy Dadey et al. v. City of Costa Mesa, Case No. 30-2014-00758104, pending in the Superior Court of the State of California for the County of Orange. Deposition testimony.
13. Anne Harding et al. v. County of Dallas, Texas et al. U.S. District Court, Northern District of Texas, Dallas Division. C.A. No. 3: 15-CV-00131-D. Deposition and trial testimony on behalf of Plaintiffs.
14. Pico Neighborhood, et al. v. City of Santa Monica, et al. Superior Court of the State of California for the County of Los Angeles, No. BC616804. Deposition and trial testimony on behalf of Defendant.

15. Joseph Thomas et al. v. Phil Bryant et al., Civil Action No. 3: 18cv 441-CWR-FKB in United States District Court for the Southern District of Mississippi, Northern Division. Deposition and trial testimony on behalf of Defendants.
16. S&R Development Estates, LLC v. Town of Greenburgh et al. in United States District Court, Southern District of New York. Declaration on behalf of Defendant.

(Updated: August 7, 2019)

Appendix B

Peter A. Morrison

C. V. and PUBLICATIONS

EDUCATION

B.A., Sociology, 1962, Dartmouth College
Ph.D., Sociology, 1967, Brown University

PROFESSIONAL EXPERIENCE

2009-present — President, Peter A. Morrison & Associates, Inc., Nantucket, MA
1969-2009 — Senior Staff Demographer and Resident Consultant, The RAND Corporation, Santa Monica, California
1979-1990 — Founding Director, Population Research Center, RAND
1967-1969 — Assistant Professor, Department of Sociology, and Research Associate, Population Studies Center, University of Pennsylvania, Philadelphia

AREAS OF EXPERTISE

Dr. Morrison's principal expertise centers on applications of demographic analysis in tracking socioeconomic trends and envisioning their consequences for public policy and business.

Domestic applications include demographic analysis for electoral redistricting; store site selection; human resource analysis; evaluating employment discrimination claims, minority representation within jury pools, and school desegregation remedies; forecasting school enrollments; and using census and administrative data to monitor local community demographic contexts.

International applications include business concerns with corporate strategic planning, globally emerging middle-class consumer markets, and demographic precursors of expanding consumer markets; comparing and evaluating individual markets; and identifying potential business opportunities spurred by forthcoming demographic change.

Dr. Morrison conducts studies for the private sector and offers executive briefings on these topics through his consulting firm, founded in 1984. Clients have included American Express, American Stores, Corning, Inc., Ford Motor Co., Marriott International, NBC, New Directions for News, Times Mirror, University of California, and CIBC Securities (Canada).

Previously, Dr. Morrison was a faculty member at the University of Pennsylvania. He also has taught periodically at UCLA, the RAND Graduate School, and the Helsinki School of Economics. He also lectures before academic and business audiences and gives invited testimony before subcommittees of the U.S. Senate and House of Representatives. He has made invited presentations to the National Science Board, the Conference Board, the National League of Cities, the National Conference of State Legislatures, the University of California Management Institute, the American Bar Association, American Society of Newspaper Editors, newsroom seminars for the Casey Journalism Center, County Counsels Association of California, American College of Surgeons, National Association of Homebuilders, Missouri Legislative Forum, World Future Society, and Volunteers of America.

He has served as advisor to the Committee for Economic Development, the Congressional Research Service, and committees of the National Academy of Sciences, U.S. Census Bureau, Department of Agriculture, National Institutes of Health, California Energy Commission, California Governor's Council on Growth Management, Center for California Studies, and United Way.

PROFESSIONAL ORGANIZATIONS/HONORS

Invited participant, U.S. Census Bureau Working Group on 2010 Race and Ethnicity
Member, L.A. Unified School District Enrollment Analysis Technical Advisory Committee
Visiting Lecturer, Helsinki School of Economics and Business Administration, summer 2001
U.S. Census Bureau Advisory Committee on Population Statistics, 1989-1995 (Chair, 1990).
Population Association of America: Board of Directors, 1978-1980; Public Affairs Committee, 1979-1986; Chair, Nominations Committee, 1981-1982; annual Program Organizing Committee, 1995, 1998; Local Arrangements Committee, 2000; Committee on Applied Demography, 1995-1999, Chair, 1998; Development Committee, 2006-2012.
Southern Demographic Association: Board of Directors, 1999-present; Vice President, 2001; President, 2003.
International Association of Applied Demographers (officer)
Center for Spatially Integrated Social Science, UC Santa Barbara: Advisory Board, 2000-
Research Advisory Board, Committee for Economic Development, 1988-1991.
Regents' Lecturer, UCLA, Spring 1987.
Social Science Research Council's Committee on the Survey of Income and Program Participation, 1985-1988.
National Advisory Child Health and Human Development Council, National Institute of Health, 1984-1987.
Population Research Committee, National Institute of Child Health and Human Development, 1977-1979.
Committee on Behavioral and Social Aspects of Energy Consumption and Production, National Academy of Sciences, 1980-1982.
Committee on Urbanization and Population Redistribution, International Union for Scientific Study of Population, Chairman, 1976-1979.
Advisory Subcommittee for Applied Social and Behavioral Sciences, National Science Foundation, 1978-1981.

Future of Rural America Advisory Committee, FHA, 1978-1981.

Editorial Advisory Committee, *Urban Studies*, 1985-1995.

Editorial Advisory Board, *J. Australian Population Assoc.*, 1995-1998.

RECENT MEDIA APPEARANCES/COVERAGE:

Interviews: CNBC; New York Times; Los Angeles Times; USA Today; Time Magazine; Seattle Times; AMA/Marketing News

Commentary: New York Times; Wall Street Journal; Washington Post; International Herald Tribune; Pittsburgh Post-Gazette; Los Angeles Times; Atlanta Constitution; Houston Chronicle; San Jose Mercury News; Providence Journal; San Antonio Express-News

Articles: "United Nations of Nantucket," *N Magazine* (Winter 2016).
(access at: www.n-magazine.com/united-nations-nantucket/)

RECENT PRESENTATIONS:

- 01/24/2019: "**Big Data for a Small Island**," lunch hour talk at Nantucket Saltmarsh Center
<https://www.youtube.com/watch?v=ZqqJ9STcMwE>
- 10/13/2016: "A Demographic Accounting Model for Class Action Litigation," presented at 2016 Southern Demographic Association meetings, Athens, GA. (coauthored with Thomas Bryan).
- 10/22/2015: At Nantucket Historical Association's "Food for Thought" series:
"**Immigration on Nantucket: What You Should Know**"
<https://www.youtube.com/watch?v=u17rINVweZs> (Morrison presentation starts at minute 2:10)
- 01/08/2015: To Waterbury, CT "**Alderman by District Reapportionment Commission**" Meeting
<https://www.youtube.com/watch?v=aj6qE3JECg0&feature=youtu.be>
(Morrison presentation start at minute 23:10)
- 01/14/2015: To Waterbury, CT "**Aldermen by District Reapportionment Commission**" meeting:
https://www.youtube.com/watch?v=98Vp4y11_sc (Morrison presentation starts at minute 9:10)
- 12/2014: "**Investing in Nantucket's Future**" <http://vp.telvue.com/preview?id=T02542&video=223735>
(Morrison presentation starts at minute 1:30)
- 11/2013: "**Growing Old: How Aging Populations Will Transform Our Lives and Times**"
http://www.youtube.com/watch?v=kJvS_hhgLDk&feature=c4-overview-vl&list=PLjgJVmnztYsTqYVn_ijBhCGxA5-7DMtGw (Morrison presentation starts at minute 1:05)

BOOKS

Morrison, P. A. and T. M. Bryan, *REDISTRICTING: A Manual for Analysts, Practitioners, and Citizens* (Springer, forthcoming 2020).

Morrison, P. A., ed. *A Taste of the Country: A Collection of Calvin Beale's Writings* (Penn State Univ. Press, 1990).

Morrison, P. A., co-ed. *Demographics: A Casebook for Business and Government* (Westview Press, 1994). Access at: https://www.rand.org/pubs/monograph_reports/MR904.html

Morrison, P. A., ed. *Population Movements: Their Forms and Functions in Urbanization and Development* (IUSSP, Ordina Editions, Liege, Belgium, 1983).

Morrison, P. A. *Demographic Information for Cities: A Manual for Estimating and Projecting Local Population Characteristics* (Santa Monica, CA: RAND Corporation, R-618, 1971). Access at: <https://www.rand.org/pubs/reports/R0618.html>

SELECTED PUBLICATIONS/PAPERS/POLICY BRIEFS/OP-EDS

Most of my publications (or abstracts) are accessible at these sites:

https://www.researchgate.net/profile/Peter_Morrison2/publications?sorting=newest&page=2

www.rand.org/pubs/authors/m/morrison_peter_a.html

"Sanctuary Cities Get a Census Bonus," op-ed in *The Wall Street Journal*, July 16, 2019.
https://www.wsj.com/articles/sanctuary-cities-get-a-census-bonus-11563318817?fbclid=IwAR3Ygf2TAeqLisUc_hbu3GS1775Zd9iGG3dlqWcMF1DQPv95jsTFBPtdHOY

"Small-Area and Business Demography" (coauthor) Chapter 31 in Dudley L. Poston, Jr. (editor). *Handbook of Population*. 2nd edition. Cham, Switzerland: Springer Nature.

"A border wall won't stop people from coming here illegally," op-ed in *The Bryan-College Station (TX) Eagle*, March 19, 2019 (co-author). Access at: https://www.theeagle.com/opinion/columnists/a-border-wall-won-t-stop-people-from-coming-here/article_5b5e7216-4551-582c-9e82-0f5adf37896d.html

"Demographic Approaches to Unveiling a Partisan Gerrymander," presented at the 2019 Population and Public Policy Conference, Albuquerque, NM.

"Estimating Nantucket's Effective Population," under review by *Population Research & Policy Review* (coauthor).

"Small-Area and Business Demography," chapter in D. Poston, ed., *Handbook of Population* (Springer, 2019), coauthored with Stan Smith & Thomas Bryan.

"Distinguishing 'False Positives' Among Majority-Minority Election Districts in Statewide Congressional Redistricting," 2017 Southern Demographic Association meetings (coauthor).

"A Comparison of Methods for Classifying and Modeling Respondents Who Endorse Multiple Racial/Ethnic Categories: A Healthcare Experience Application," (coauthor) *Medical Care* (2019)
Access at: <https://www.ncbi.nlm.nih.gov/pubmed/30439794>

"Can Puerto Ricans Spark a Latino Political Backlash?" op-ed in *San Antonio Express-News*, February 13, 2018 (coauthored with Charles S. Bullock, III).
Access at: https://www.researchgate.net/publication/323200663_Can_Puerto_Ricans_spark_a_Latino_political_backlash

"Focus on Teaching: The Legend of the Calamity-Induced Baby Boom," PAA Affairs, Spring 2017. Access at: https://www.researchgate.net/publication/315683457_Focus_on_Teaching_The_Legend_of_the_Calamity-Induced_Baby_Boom

"The Demography of Trump's Wall," *N-IUSSP*, April 3, 2017 (coauthor).

Access at: www.niussp.org/article/demography-trumps-walle-mur-de-trump-et-ses-consequences-demographiques/
Russian translation: <https://demreview.hse.ru/article/download/8667/9249/>

"Three Myths of U.S. Immigration," op-ed in *San Antonio Express-News*, March 4, 2017 (coauthored with Dudley L. Poston, Jr.).

Access at: www.mysanantonio.com/opinion/commentary/article/Three-myths-of-U-S-immigration-10975928.php

"From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analysis," *Social Science Quarterly* (2017), coauthor.

Assess at: https://www.researchgate.net/publication/315631377_From_Legal_Theory_to_Practical_Application_A_How-To_for_Performing_Vote_Dilution_Analyses_From_Legal_Theory_to_Practical_Application

"Foreward" to D. A. Swanson, ed., *The Frontiers of Applied Demography* (2017)

Assess at: https://www.researchgate.net/publication/311486631_Foreward_to_The_Frontiers_of_Applied_Demography_2017

"Projecting Future Demand for Assisted Living in the US: A Case Study," chapter 6 in D. A. Swanson, ed., *The Frontiers Applied Demography* (2017).

Access at:

https://www.researchgate.net/publication/311800586_Projecting_Future_Demand_for_Assisted_Living_chap_6_in_THE_FRONTIERS_OF_APPLIED_DEMOGRAPHY

"Health Care Access: The Hollow Promise," op-ed in *Starkville Daily News*, 10/18/2016 (coauthored with Ron Cossman).

Access at: https://www.researchgate.net/publication/309458235_Health_Care_Access_The_Hollow_Promise

"We have the data to make voting fair. Let's use it." op-ed in *The Washington Post*, 10/22/2015

Access at: <http://www.washingtonpost.com/news/in-theory/wp/2015/10/22/we-have-the-data-to-make-voting-fair-lets-use-it/>

Supreme Court of the United States. "Brief of Demographers Peter A. Morrison, Thomas M. Bryan, William A. V. Clark, Jacob S. Siegel, David A. Swanson, and The Pacific Research Institute as *Amici Curiae* in Support of Appellants," in *Evenwel et al. v. Abbott et al.*

Access at: <http://www.scotusblog.com/wp-content/uploads/2015/08/Demographers-Amicus.pdf>

"Exploring the Blizzard Babies Phenomenon," op-ed in *Providence Journal*, March 3, 2015.

Access at: www.providencejournal.com/article/20150303/OPINION/150309836

"A Method to Forecast Hispanic Voting Strength at Local Scales," presented at Applied Demography Conference, San Antonio, Texas, January 8-10, 2014.

"Quantifying the Effect of Age Structure on Voter Registration," *Social Science Quarterly* (2014).

Access at: <http://onlinelibrary.wiley.com/doi/10.1111/ssqu.12059/abstract>

"Forecasting Hispanics' Ripening Voting Strength at Local Scales," presented at 2012 Annual Meeting of Southern Demographic Association, Williamsburg, VA

"Gauging Hispanics' Effective Voting Strength in Proposed Redistricting Plans: Lessons Learned Using ACS Data," (coauthored with T. Bryan), for National Academy of Sciences Workshop on the Benefits (and Burdens) of the American Community Survey, Case Studies/Agenda Book, chap. 5 (2012). Access at: http://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_073124.pdf

"Chinese Workers Could Replace Mexican Immigrants," op-ed in *Houston Chronicle*, Aug. 12, 2011 (coauthored with Dudley Poston, Jr.).

Access at: www.chron.com/opinion/outlook/article/Chinese-workers-could-replace-Mexican-immigrants-2077827.php

"Integrating Census Data to Support a Motion for Change of Venue," *Population Research & Policy Review* (coauthored with Dean Judson), 2011. Access at: <http://paa2011.princeton.edu/papers/111043>

"An Evaluation of Additive and Hierarchical Classifications of Race/Ethnicity as Measured on Census 2000," coauthor (under review).

"Using the Census Bureau's Surname List to Improve Estimates of Race/Ethnicity and Associated Disparities," *Health Services and Outcomes Research Methodology* 9(2), pp.69-83 (coauthor). Access at: www.rand.org/pubs/external_publications/EP20090611.html

"Teaching Business Demography Using Case Studies," presented at the International Union for the Scientific Study of Population Seminar on Applications of Demography in Business, Sydney Australia, October 2007 (coauthor). Appears in *Population Research & Policy Review*.

Access at: <http://link.springer.com/article/10.1007/s11113-009-9155-4>

"Targeting Spatial Clusters of Elderly Consumers in the USA," presented at the International Union for the Scientific Study of Population Seminar on Applications of Demography in Business, Sydney Australia, October 2007 (coauthored with Thomas Bryan). Appears in *Population Research & Policy Review*. Access at: <http://link.springer.com/article/10.1007/s11113-009-9149-2>

"Assessing the Need for a New Medical School: A Case Study in Applied Demography," *Population Research & Policy Review* (coauthor).

"A New Method for Estimating Race/Ethnicity and Associated Disparities Where Administrative Records Lack Self-Reported Race/Ethnicity," coauthor, *Health Services Research Journal* 43(5), Oct. 2008. Access at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2653886/>

"Forecasting the Supply of and Demand for Physicians in the Inland Southern California Area" (coauthor), RAND Technical Report TR524, 2007.

"Evaluating a Claim of Discriminatory Annexation Using Demographic Analysis: An Instructional Case," at 2005 annual Southern Demographic Association meetings.

"Evaluating Evidence of Discrimination in Multi-Ethnic Housing Markets," *Population Research & Policy Review*, 2008 (coauthored with William A. V. Clark).

"Methods for Gauging the Target Populations that Community Colleges Serve," *Population Research & Policy Review* 26(1), 2007 (coauthored with L. Santibañez, G. Gonzalez, S. J. Carroll).

"Lingering Effects of Discrimination: Tracing Persistence Over Time in Local Populations," *Population Research & Policy Review*, 2006.

"Understanding the Antecedents of Underage Drinking," at 2005 annual Southern Demographic Association meetings, Durham, NC (coauthored with Allan Abrahamse).

"China: Bachelor Bomb," *New York Times*, op-ed 09/14/2005 (coauthored with Dudley Poston)
Access at: <http://www.rand.org/blog/2005/09/china-bachelor-bomb.html>

"Small-Area and Business Demography," chapter in D. Poston and M. Micklin, *Handbook of Population*, 2005 (coauthored with Stan Smith).

"Future Demographic Challenges to California School Districts," presented at 2005 annual Population Association of America meetings, session on School Demography.

"Demographic Overview of California's K-12 Public School Student Population," chap. 2 in S. J. Carroll et al., *California's K-12 Public Schools: How Are They Doing?* RAND MG-186, 2005.

"Counting on Demography: Fostering Applications of the Social Sciences," invited plenary address at the 2005 Southwestern Social Science Association meetings, New Orleans

"How Migration Flows Shape the Elderly Population of Metropolitan Pittsburgh," at 2004 annual Southern Demographic Association meetings, Hilton Head, SC (coauthored with Chris Briem)

"The Bright Lights in Pittsburgh's Future," op ed appearing in *Pittsburgh Post-Gazette*, Sept. 19, 2004 (coauthored with Barry Balmat)

"New Approaches to Spotting Enclaves of the Elderly Who Have Aged in Place," presented at 2004 Population Association of America meetings (coauthored with Tom Bryan).

"Developing an Arab-American Surname List: Potential Demographic and Health Research Applications," at 2003 Southern Demographic Association meetings (coau. with B. Kestenbaum, D. Lauderdale, A. Abrahamse, S. El-Badry).

"A Demographic Overview of Metropolitan Pittsburgh," RAND Issue Paper IP-256 (2003).

"Confronting a Race-Based School Admissions Policy," *Chance* 16(1), 2003.

"An Overview of Business Demography in the U.S.A.," invited paper for the Australian Population Association's 11th Biennial Conference, Sydney, October 2002.

"Internal Migration and Short-Distance Mobility," Chapter 19 in D. Swanson, et al., *The Methods and Materials of Demography*, rev. ed., 2003 (coau. with T.M. Bryan and D.A. Swanson).

"Business Demography," in P. Demeny and J. McNicholl, eds., *Encyclopedia of Population*, 2003 (coauthored with Stan Smith).

"A National Legacy of Migration," in Carla Blank, *Rediscovering America* (2003).

Review of J. S. Siegel, *Applied Demography: Applications to Business, Government, Law, and Public Policy in Population and Development Review* 28(1), 2002.

"A Demographic Perspective on Our Nation's Future," RAND Documented Briefing, 2001.

"Using First Names to Estimate Racial Proportions in Populations," presented at the 2001 Population Association of America meetings.

"At-Large Elections Under Legal Challenge: Where Demographic Analysis Fits In," presented at the 2000 Population Association of America meetings.

"Meeting Local Information Needs: A Case Study in Team Applied Demography," *Applied Demography Newsletter*, Population Association of America, Spring 2002 (coauthored).

"Gauging Future Prospects for a Neighborhood Vehicle: Where Demographic Analysis Fits In," at 1999 Southern Demographic Association meetings, San Antonio.

"Forecasting Enrollments for Immigrant Entry-Port School Districts," *Demography*, Nov. 2000.

"Charting Alternatives to a Segregated School Admissions Policy: Where Demographic Analysis Fits In," at 1998 Population Association of America meetings, Chicago (abridged version appears in *Chance*).

"Unveiling the Demographic 'Action' in Class Actions," *Population Research and Policy Review*, 1999.

"Family Policies and Demographic Realities," chapter in J.W. Hughes and J.J. Seneca, eds., *America's Demographic Tapestry: Baseline for the New Millennium*, Rutgers Univ. Press, 1999.

"Applying Demographic Analysis in Affirmative Action Disputes: An Instructional Case," *Population Research and Policy Review*, 1998.

"Demographic Influences on Latinos' Political Empowerment: Comparative Local Illustrations," *Population Research and Policy Review*, 1998.

"Demographic Change and School District Response: Assessing Alleged Discriminatory Effects of Boundary Changes," under review (with W.A.V. Clark).

"Forecasting Enrollments During Court-Ordered Desegregation," *Population Research and Policy Review*, 1996.

"Applying Demographic Analysis to Store Site Selection," *Population Research and Policy Review*, 1996 (with A. F. Abrahamse).

"Tracking Growth of Emerging Consumer Markets Worldwide: Where Demographic Analysis Fits In," presented at Sixth International Conference on Applied and Business Demography, Bowling Green, OH (coauthored).

"Tying Knots in the American Tapestry," Op-ed article, *Los Angeles Times*, Sept. 18, 1995.
Access at: http://articles.latimes.com/1995-09-18/local/me-47167_1_ethnic-identity

"Broadening Client Perspectives on Business Concerns," *Applied Demography*, Summer 1995.

"Demographic Foundations of Political Empowerment in Multi-Minority Cities," *Demography*, May, 1995 (with W.A.V. Clark).

"Demographic Perspectives on the Voting Rights Act," RAND P-7905, 1995 (briefing cohosted by U. S. House Subcommittee on Census and The Population Resource Center, Oct.19,1994).

Demographics: A Casebook for Business and Government, Westview Press, 1994 (coeditor).

"Empowered or Disadvantaged? Applications of Demographic Analysis to Political Redistricting," chapter in *Demographics* (cited above).

"A Riot of Color: The Demographic Setting of Civil Disturbance in Los Angeles," RAND P-7819 (with Ira S. Lowry). Condensed version appears in Mark Baldassare (ed.), *The Los Angeles Riots: Lessons for the Urban Future*, Westview, 1994.

Access at:

https://www.researchgate.net/publication/311800927_A_Riot_of_Color_The_Demographic_Setting

"Surname Analysis for Estimating Local Concentration of Hispanics and Asians," *Population Research and Policy Review*, 1994 (with A. F. Abrahamse).

Access at: https://www.researchgate.net/publication/270279296_Surname_Analysis_for_Estimating_Local_Concentrations

"The Demographic Context of Army Family Support Policy," chapter in M.J. Eitelberg and S.L. Mehay (eds.), *Marching Toward the 21st Century* (Greenwood Press, 1994).

"Strategic Sleuths," *Forecast Magazine*, Nov/Dec 1993.

"Congress and the Year 2000: Peering into the Demographic Future," *Business Horizons*, Nov/Dec 1993 (condensation of RAND N-3279 cited below).

"A California That Can Work: People, Productivity, and Energy," RAND P-7828 (invited testimony before the California Energy Commission, June 1993).

"Goodbye Past, Hello Future: California's Demographic Shift," Op-ed article, *Los Angeles Times*, September 13, 1993.

"More than Meets the Eye," *Chance*, May 1993.

"Employment Discrimination: How Demographic Analysis Fits In," presented at Fourth International Conf. on Applied Demography, Bowling Green, Ohio, September 1992.

"Is 'Aging in Place' a Blueprint for the Future?" Association of American Geographers Meeting, San Diego, RAND, P-7794, 1992.

"Gauging Hispanic Voting Strength: Pitfalls and Paradoxes," *Population Research and Policy Review*, 1992 (with W.A.V. Clark).

"Local Redistricting: The Demographic Context of Local Boundary Drawing," *National Civic Review*, Winter/Spring 1992 (with W.A.V. Clark).

"Mirroring the Mosaic: Redistricting in a Context of Cultural Pluralism," RAND, P-7789, 1992.

"Testimony before House Subcommittee on Census and Population," RAND, P-7784, 1992.

"Healthier Childhoods and Family Responsibility: Two Issue Papers," RAND, P-7788, 1992.

"How Demographic Analysis Supports Redistricting," for Mandatory Continuing Legal Education course sponsored by County Counsels Association of California, January 1992.

"California's Future: More to Come," Op-ed article, *The Los Angeles Times*, Dec. 3, 1991.

Access at: http://articles.latimes.com/1991-12-03/local/me-416_1_future-growth

Soldiers' Families: Tracking Their Well-Being During Peacetime and War, RAND, N-3405-A, 1992 (coauthor).

"California's Demographic Outlook: Implications for Growth Management," RAND, P-7738, 1991.

"The Changing Demographic Context of Postsecondary Education," RAND, P-7737, 1991.

"The Demographer's Role in the Local Boundary-Drawing Process," RAND, P-7711, 1991 (coauthor).

"Looking In From Outside: Enhancing Demographic Perspectives on Business Concerns," given at 1991 Population Association of America meetings.

"Demographic Paradoxes in the Los Angeles Voting Rights Case," *Evaluation Review*, 1991 (with W.A.V. Clark).

"Future Images—Childhood, The Workplace, Our Communities," RAND P-7656, 1990.

"The Changing Demographic Context of Municipal Governance," RAND P-7654, 1990.

"Pitfalls in Estimating Eligible Voters Among Hispanics," coauthored, given at 1990 Population Association of America meetings.

"Demographic Factors Reshaping Ties to Family and Place," *Research on Aging*, Dec. 1990.

"Applied Demography: Its Growing Scope and Future Direction," *The Futurist*, March/April 1990.

"A Demographic Perspective on Future Issues," *Congressional Research Service CRS Review*, Jan/Feb 1990.

"Leaving School Early: 'Stopping Out' and Dropping Out Among American Youth," given at the 1989 American Sociological Association meetings (with Jane Mauldon).

Families in the Army: Looking Ahead, RAND, R-3691-A, 1989 (coauthor).

"Quantifying Legal Standards in Section 2 Voting Rights Cases," paper given at Population Association of America.

Congress and the Year 2000: A Demographic Perspective on Future Issues, RAND, N-3279, March 1991.

"What Tomorrow's Demographers Will Be Called Upon to Do," RAND P-7469, 1988.

Beyond Stereotypes: Who Becomes a Single Teenage Mother?, RAND R-3489, 1988 (coau.).

"Government Must Help Families With Long-term Care for Elderly," op-ed article, *The Atlanta Constitution*, April 19, 1988.

"Teens Willing to Consider Single Parenthood: Who is at Greatest Risk?" *Family Planning Perspectives*, Jan/Feb, 1988 (coauthor).

The Current Demographic Context of Federal Social Programs, RAND, N-2785, 1988.

"Demographic Factors Reshaping the U.S. Market for New Housing," RAND, P-7467, 1988.

"Applied Demography: Its Current Scope and Future Direction in the United States," RAND Paper, 1988.

Public Libraries Face California's Ethnic and Racial Diversity, RAND, R-3656, 1988 (coauthor, Chapter 4).

"Changing Demographics: What to Watch For," *Business Economics*, 1987.

"Continuity and Change Across the Population Sciences," RAND, P-7281, 1986.

"Pro-Family Laws May Miss the Mark," op-ed article in *The Wall Street Journal*, Dec. 5, 1986.

Changing Family Structure: Who Cares for America's Dependents? RAND, N-2518, 1986.

"Accounting for the Educational Shortfalls of Mothers," *Journal of Marriage and the Family*, 1986 (coauthored).

"The Prism of Migration," *Social Science Quarterly*, 1986 (with Julie DaVanzo).

Access at: https://www.researchgate.net/publication/284957921_The_prism_of_migration_Dissimilarities_between_return_and_onward_movers

How Demographic Shifts Will Affect the IRS and Its Mission, RAND, P-7170, 1985.

Access at: <http://www.ponline.org/node/421417>

"Characteristics of Migrants from Metropolitan to Nonmetropolitan Areas in the U.S.A.," *Espace Populations Societes*, 1985 (with Kevin McCarthy).

Demographics and Business Decisionmaking: Prospects and Possibilities for the 1980s, RAND, P-7017, 1984. Appears in *Marketing Review*, Fall 1985.

"Tracking People," *Group Practice Journal*, July/August 1984.

Demographic Forces Reshaping Small Communities in the 1980s, RAND, N-1887, 1982 (coauthor). Appears in *Southwestern Review of Management and Economics*, 1984.

Population Movements: Their Forms and Functions in Urbanization and Development, published by Ordina for International Union for the Scientific Study of Population, 1983 (editor and author of Chap. 1).

Current Demographic Trends and Federal Policy: An Overview, RAND, N-2030, 1983.

"Is Population Deconcentration Lengthening Commuting Distances?" *Population Research and Policy Review*, 1983 (with Kevin McCarthy).

Migration Sequences: Who Moves Back and Who Moves On?, RAND, R-2548-NICHD, 1982 (with Julie DaVanzo).

Demographic Challenges in America's Future, RAND, R-2911, 1982 (with William P. Butz).

"Different Approaches to Monitoring Local Demographic Change," chapter in E. S. Lee and H. F. Goldsmith, eds., *Population Estimates: Methods for Small Area Analysis*, Sage, 1982.

"The Energy Situation and the World of Californians," in *Regional Perspectives on Energy Issues*, (The Conference Board, July 1982).

Demographic Certainties and Uncertainties in the Future of Social Security, RAND, N-1742-NICHD, 1981 (invited Senate testimony). Appears in *Challenge: The Magazine of Economic Affairs*, Jan.-Feb., 1982.

"There Are Just Too Many Uncertainties," op-ed article, *The Sacramento Bee*, 9/20/81.

Teenage Parenthood: A Review of Risks and Consequences, RAND N-1714, 1981 (coau.).

Teenage Parents: Their Ambitions and Attainments, RAND, R-2771, 1981 (coau.).

"Return and Other Sequences of Migration in the U.S.," *Demography*, 18 (1): 85-101 1981 (coau.).

"How Demographers Can Help Legislators," *Policy Analysis*, 1980.

Accommodating the Demography of the 1980s, Midcontinent Perspective Series, Midwest Research Institute, December 1980.

City Data: A Catalog of Data Sources for Small Cities, RAND, R-2612, 1980 (coauthored).

Access at: <https://www.rand.org/content/dam/rand/pubs/reports/2008/R2612.pdf>

Effects of Postsecondary Experiences on Aspirations, Attitudes, and Self-Conceptions, RAND R-2616, 1980 (coauthor).

Consequences of Parenthood in Late Adolescence: Findings from the National Longitudinal Study of High School Seniors, RAND, N-1343-NICHD, 1979 (coauthored).

"Demographic Trends Impinging on Energy Use," chapter in Charles T. Unseld et al., *Sociopolitical Effects of Energy Use and Policy*, National Academy of Sciences, Washington, D.C., 1979.

The Future Demographic Context of the Health Care Delivery System, RAND, N-1347, 1979.

"The Transition to Zero Population Growth in the Midwest," chapter in C. C. Roseman (ed.), *Population Redistribution in the Midwest*.

"Current Demographic Change in Regions of the United States," chapter in V. L. Arnold (ed.), *Alternatives to Confrontation: A National Policy Toward Regional Change*; condensed version appears in *American Demographics*, May 1979.

Overview of Demographic Trends Shaping the Nation's Future, RAND, P-6128, 1978 (testimony before Joint Economic Committee of Congress).

Access at: <http://www.ponline.org/node/440950>

The Current Demographic Context of National Growth and Development, RAND, P-5514, 1975 (Congressional testimony); published in condensed form in L. S. Bourne and J. W. Simmons (eds.), *Systems of Cities*, Oxford Univ. Press, 1978, Chap. 6.6.

"Emerging Public Concerns Over U.S. Population Movements in an Era of Slowing Growth," in T. Espenshade and W. Serow (eds.), *The Economic Consequences of Slowing Population Growth*, 1978.

"The Image of 'Elsewhere' in the American Tradition of Migration" (coauthored), in W. H. McNeill and R. S. Adams (eds.), *Human Migration: Patterns, Policies, Implications*, Indiana University Press, Bloomington, Indiana, 1978.

"New York State's Transition to Stability: The Demographic Outlook," in Ben Chinitz (ed.), *The Declining of New York in the 1970s: A Demographic and Economic Analysis*, Praeger, 1978.

Toward A Policy Planner's View of the Urban Settlement System, RAND, P-5357, 1975; condensed version appears in L. S. Bourne and J. W. Simmons (eds.), *Systems of Cities*, Oxford University Press, 1978, Chap. 7.3.

"The Changing Demographic and Economic Structure of Nonmetropolitan Areas in the U.S.," *International Regional Science Review*, 2(2), 1977 (with Kevin McCarthy).

"Forecasting Population of Small Areas: An Overview," in *Population Forecasting for Small Areas*, Oak Ridge Associated Universities, Oak Ridge, Tennessee, 1977.

"Demographic Trends That Will Shape Future Housing Demand," *Policy Sciences*, 1977.

"The Functions and Dynamics of the Migration Process" (Chap. 4); and "Urban Growth and Decline in the U.S.: A Study of Migration's Effects in Two Cities" (Chap. 14), in A. Brown and E. Neuberger (eds.), *Internal Migration: A Comparative Perspective*, Academic Press, 1977.

San Jose and St. Louis in the 1960s: A Case Study of Changing Urban Populations, RAND, R-1313-NSF, 1973; adaptation appears in S. Goldstein and D. Sly (eds.), *Patterns of Urbanization: Comparative Country Studies*, International Union for Scientific Study of Population, Liege, Belgium, 1977.

Rural Renaissance in America? The Revival of Population Growth in Remote Areas, Population Reference Bureau, Inc., 1976.

National Longitudinal Study of High School Seniors: An Agenda for Policy Research, RAND, R-1964-HEW, 1976 (coauthored).

The Demographic Context of Educational Policy Planning, Occasional Paper of the Aspen Institute for Humanistic Studies, 1976.

"A Method for Monitoring Small-Area Population Changes in Cities," *Review of Public Data Use*, April 1975 (coauthored).

Recent Research Insights into Local Migration Flows, RAND, P-5379, 1975 (coauthored).

Population Movements and the Shape of Urban Growth: Implications for Public Policy, RAND, R-1072-CPG, 1972 (Commission on Population Growth and the American Future, *Research Reports*, Vol. V, 1973); adaptation appears in J. Friedmann and W. Alonso, *Regional Policy: Readings in Theory and Applications*, MIT Press, 1975.

"Urban Growth and Decline: San Jose and St. Louis in the 1960s," *Science*, 1974.

Review of Federal Programs to Alleviate Rural Deprivation, RAND, R-1651, 1974 (coauth.).

"Guiding Urban Growth: Policy Issues and Demographic Constraints," RAND P-5212, 1974.

Access at: https://www.academia.edu/29836028/Guiding_urban_growth_Policy_issues_and_demographic_constraints

"A Demographic Assessment of New Cities and Growth Centers as Population Redistribution Strategies," *Public Policy*, 1973.

Dimensions of the Population Problem in the United States RAND, R-864-CPG, 1972 (Comm. on Population Growth and the Amer. Future, *Research Reports*, Vol. V, 1973).

How Population Movements Shape National Growth, RAND, P-5007, 1973 (Congressional Seminar on National Growth Policy).

Migration from Distressed Areas: Its Meaning for Regional Policy, RAND, R-1103, 1973.

"Theoretical Issues in the Design of Population Mobility Models," *Environment and Planning*, 1973.

The Impact and Significance of the Rural-Urban Migration in the United States, RAND, P-4752, 1972 (testimony before U.S. Senate Subcommittee on Migratory Labor and Public Welfare).

"Chronic Movers and the Future Redistribution of Population," *Demography*, 1971.

"The Role of Migration in California's Growth," in K. Davis and F. Styles (eds.), *California's Twenty Million: Research Contributions to Public Policy*, Institute of International Studies, University of California, Berkeley, 1971.

"Duration of Residence and Prospective Migration," *Demography*, 1967.

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